BOTANICAL GAZETTE.

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EDITORIAL.—There are times when an editor needs to say a few words face to face with his patrons, and we conceive this to be one of those times. We fear that since the GAZETTE has been growing in size and favor we have lost some unpretentious notes and contributors that we were in the habit of having when it was limited to four pages and a small subscription list. The subscription list is still small enough, too small in fact, but the pages are more numerous, not to repel notes but to attract them. It is a mistaken idea that we now want only articles that are regular monographs, containing days and weeks of study, for we are still after the short notes, not containing so very much in themselves, but in the aggregate making a spicy and interesting journal. A magazine should contain not only the heavy and solid matter fit for students to bother their brains about and the ordinary reader to lay aside in despair, but it should also contain the froth and sparkle of spicy notes that any one can read with interest. A prime rule in writing to interest is to be brief. Condense what you have to say in a few words and give us the cream, we have no time to drink the milk. One hundred persons will read a short note when only one will read it if thinned out and spread over a greater surface. Even so scientific an observer as Draper had to be blamed for his wordy style in recording his results. It will be remembered that when he studied the assimilation of plants by means of the spectroscope and published his results, grand as they were, Dr. Gray, in reviewing the paper, felt compelled to say that the whole subject was like an omelette in which Senebier furnished the egg, DeSaussure the milk and Draper the intumescence. We hope our readers now will all send us some short, pithy notes and by this interchange of courtesies they will all be pleased. We mean simply to act as a medium through which our subscribers may talk with one another, a sort of monthly telephone —and not a machine to grind out articles for their benefit. We can fill the GAZETTE, there is no trouble about that, but we want more variety.

WHO FINDS WHITE PARTRIDGE-BERRIES?—So far as we know, or ever heard of, only Miss Kate Fisher Kurtz, of York, Penn., who sends us fresh plants. The berries are as white as those of *Chiogenes*, and form a fine contrast with the red ones. It was found in a single patch, in the midst of the ordinary form. The albinism affects even the corolla, the tip of which in bud lacks the purple or rose tinge of the ordinary buds.—A. GRAY.

SALIX BALSAMIFERA, BARRATT, = S. CORDATA, VAR. BALSAMIFERA, HOOK., AN OLDER NAME FOR S. PYRIFOLIA, ANDERS.—It is an interesting fact, proven by a specimen preserved in the Herbarium of the Philadelphia Academy, that this Willow was collected "on the banks of the Ammonoosuck, White Hills, New Hamsphire," by Mr. H. Little, as long ago as 1823! Occurring mainly between New Brunswick and Lake Winnipeg—a geographical representative of *S. pyrolæfolia* of a corresponding distribution in Eastern Siberia—it is remarkable that this species has been so rarely found within our northern boundary. Only two stations can be recorded, viz; the one above mentioned, which Mr. Pringle is confident will be rediscovered; the other near Flint, Michigan, where Dr. D. Clarke collected specimens a few years ago, but unfortunately the plants were destroyed soon after; the besom of agricultural improvement sweeping so clean that not a vestige, root or branch, was left. Doubtless other localities will be found, especially in the cold peat bogs of northern New England along the St. John, in northern Michigan, &c., and it appears desirable, therefore, that a species coming more and more into notice as an addition to our Flora of the Northern States, should receive without further delay its older and rightful name of *S. balsamifera*, Barratt. Conscious that the opinion of an amateur, a mere private in the ranks (and not of the "regular service" at that), must in itself carry little weight as opposed to the *ipse dixit* of a botanist of the commanding position and commanding ability of Prof. Andersson I may be pardoned, I hope, for strengthening my assertion by the following statement of facts.

In the Columbia College (Torrey) Herbarium there is luckily a fasciculus marked in the handwriting of Dr. Torrey, "Ex herb. Hooker. Willows from British America studied and named by Dr. Barratt before the publication of that portion of the Flora Boreali-Americana containing the *Salices*." The tickets are in the handwriting of Dr. Barratt. No. 53 of this collection comprises the following specimens, viz: mature leaves from "Cumberland House, *Drummond*"; fertile

aments from "Lake Winnipeg, *Richardson*." These specimens although brought together from widely sundered stations, are rightly mated even to the mature leaves, and show that the character of the species was clearly understood; they represent *S. balsamifera*, Barratt, so completely in flower, fruit and foliage that there can be no room for doubt as to what Dr. Barratt regarded as the type of his species; and furthermore there is just as little uncertainty that *S. pyrifolia*, Anders. is a recent name for the same plant.

It is to be regretted that after so clearly indicating a distinct species Dr. Barratt—in his desire, I imagine, to dispose in some way of all the material placed in his hands—should have followed his type specimens with leaves only of *S. discolor* from "Cumberland House, *Drummond*" as "54 var. *intermedia*"; and leaves only of *S. petiolaris* as "55 var. *angustifolia*." But it is a rule that the including under varieties what belongs to other species does not affect the validity of the species itself, and it should be borne in mind that while the type specimens present a complete and unmixed series of flowers, fruit and leaves, the varieties so-called are shown by *leaves only*. That *S. balsamifera* must have been represented by equivalent specimens in the Hookerian herbarium goes with the saying, otherwise the reduction to *S. cordata* in the Flora Boreali-Americana becomes *absolutely inexplicable*. Yet Andersson in his *Salices Boreali-Americanæ*, p. 20, remarks, "*Quantum e speciminibus* in herb. Hook. judicare possum *S. balsamifera*, cujus ramus foliis tectus tantum adest, ad *S. acutifolium*, W., pertinet." And he then goes on to describe the leaves as about 4 inches long, ½ an inch wide, sharply serrate, etc. Now there is *only one such specimen* in the Kew herbarium and that is like No. 55 above mentioned; leaves only of *S. petiolaris* and marked "B"; the rest are all (for there is no equivalent of No. 54 in the Kew set) designated as the typical forms of *S. balsamifera* and on the sheet is written "*S. cordata*, fide Andersson, 1857." The leaves vary from an inch to 1½ inches in width and are very similar to forms collected by the Rev. James Fowler in New Brunswick.

A friend, whose opinion is entitled to the utmost consideration, has suggested that the Kew specimens were probably returned before Andersson recognized in the collections of Bourgeau his *S. pyrifolia* and that Barratt's No. 53 was overlooked or forgotten. Still in this view of the case it is strange that we have a description in detail of the leaves of *S. petiolaris* in the Kew herb., and finally a reduction of *S. balsamifera* to *S. discolor* (in DC. Prod.) and never a word regard-

ing the full type series of specimens; for if these were known to the author, and deemed *S. cordata* in 1857, it would naturally be supposed that *S. balsamifera* would be left where it was placed by Hooker, even if the same plant were on another page described as a new species. It is clear that in restoring Barratt's name we are simply doing what Prof. Andersson would, or should, have done had not this oversight occurred.

P. S. I have just received a letter from Mr Pringle announcing the discovery of *S. balsamifera* in the White Mountains; not, however, on the banks of the Ammonoosuc, where search was first made in vain, but on the Saco, where specimens were collected June 13th, having immature fertile aments and the characteristic Amelanchier-like leaves.—M. S. Bebb.

Carex comosa, Boott.—On the 5th of July I collected, in the edge of the salt meadows, near Newark, N. J., a single specimen of a remarkable abnormal form of *Carex comosa*. The upper part of the culm is very slender, and bears three sessile spikes, each subtended by a long, very slender bract. Spikes four to eight inches apart, all pistillate except at the apex, where they have empty staminate scales. Upper spike loosely compound, its divisions sessile, and subtended by long (some 1½ inches) bristle shaped bracts, these becoming successively shorter, as their spikelets decrease in size, until they pass into the ordinary scales of the spike.—H. H. Rusby.

Potamogeton.—By the will of the late Dr. J. W. Robbins, of Uxbridge, Mass., all his collections of the genus *Potamogeton* have been sent to Rev. Thos. Morong, of Ashland, Mass., for arrangement and distribution. Mr. Morong is preparing not only to do this but proposes to do some work of revision. As this will be of great use we would urge that botanists over the country send Mr. Morong specimens of the species for examination, especially any unusual forms, as a good deal of new material is already in hand for a general revision of the genus.—J. M. C.

Dichogamy in Rhododendron maximum.—The writer does not know whether the above fact has been recorded or not, but it may be news to some. It was noticed this year in a study of the above species that the stamens mature first and are ready to shed their pollen before the pistil is even stigmatic. After a while the pistils mature and receive their pollen from other flowers through the agency of insects.—J. M. C.

CHANGES IN THE NOMENCLATURE OF POLYPETALÆ.—For the convenience of botanists who have no access to Watson's Bibliographical Index of the *Polypetalæ* we publish the following important changes in names. There are numerous changes in authorities also, but these are omitted.

Clematis cylindrica, Sims. = *C. crispa*, L.

Anemone Caroliniana, Walt. = *A. dicupetala*, L.

Anemone Pennsylvanica, L. = *A. dichotoma*, L.

Hepatica triloba, Chaix. = *Anemone Hepatica*, L.

Hepatica acutiloba, DC. = *Anemone acutiloba*, Lawson.

Ranunculus divaricatus, Schrank. = *R. aquatilis*, L., var. *stagnatilis*, DC.

Nuphar luteum, Smith, var. *pumilum*, Gr. = *N. pumilum*, Sm.

Cardamine rhomboidea, DC., var. *purpurea*, Torr. = *C. rotundifolia*, Mx.

Arabis hesperidoides, Gr. = *Thelypodium pinnatifidum*, Watson.

Solea concolor, Ging. = *Ionidium concolor*, Benth. and Hook.

Drosera longifolia, L. = *D. intermedia*, Drev. and Hayne, var. *Americana*, DC.

Hypericum prolificum, L., var. *densiflorum*, Gr. = *H. densiflorum*, Ph.

Vaccaria vulgaris, Host. = *Saponaria Vaccaria*, L.

Lychnis vespertina, Sibth. is omitted.

Sagina subulata, Wimmer = *S. decumbens*, T. & G.

Spergularia rubra, Presl. var. *campestris*, Gr. = *Lepigonum rubrum*, Fries.

Spergularia salina, Presl. = *Lepigonum salinum*, Fries.

Spergularia media, Presl. = *Lepigonum medium*, Fries.

Spergularia media, Presl. var. *macrocarpa*, Gr. = *Lepigonum medium*, Fries., var. *macrocarpa*, Gr.

Oxalis stricta, L. = *O. corniculata*, L., var. *stricta*, Sav.

Xanthoxylum Carolinianum, Law. = *X. Clava-Herculis*, L.

Vitis bipinnata, T. & G. = *V. arborea*, L.

The specific names of *Rhamnus* are made feminine.

Frangula Caroliniana, Gr. = *Rhamnus Caroliniana*, Walt.

Ceanothus ovalis, Bigel. = *C. ovatus*, Desf.

Æsculus Hippocastanum, L. is omitted.

Psoralea floribunda, Nutt. = *P. tenuiflora*, Ph.

Lespedeza procumbens, Mx. = *L. repens*, Barton.

Lespedeza violacea, Pers. var. *sessiliflora*, Gr. = *Lespedeza reticulata*, Pers.

Lespedeza capitata, Mx., var. *angustifolia*, Gr. = *L. angustifolia*, Ell.

Cassia obtusifolia, L. = *C. Tora*, L.

Spiræa opulifolia, L. = *Neillia opulifolia*, B. & H.

Dryas integrifolia, Vahl. = *D. octopetala*, L., var. *integrifolia*, Cham. & Schlect.

Potentilla paradoxa, Nutt. = *P. supina*, L.

Dalibarda repens, L. = *Rubus Dalibarda*, L.

Rosa lucida, Ehrhart (Gr. Man. p. 158) should be *R. lucida*, Pursh, which is now *R. parviflora*, Ehrh.

Rosa nitida, Willd. is a distinct species.

Cratægus tomentosa, L., var. *mollis*, Gr. = *C. subvillosa*, Schrad.

Amelanchier Canadensis, T. & G., var. *alnifolia*, T. & G. = *A alnifolia*, Nutt.

Ribes hirtellum, Mx. = *R. oxyacanthoides*, L.

Philadelphus inodorus, L., var. *grandiflorus*, Gr. = *P. grandiflorus*. Willd.

Sullivantia Ohionis, T. & G. = *S. Ohioensis*, T. & G.

Fothergilla alnifolia, L. f. = *F. Gardeni*, L.

Epilobium angustifolium, L. = *E. spicatum*, Lam.

Epilobium alpinum, L., var. *majus*, Vahl. = *E. origanifolium*, Lam.

Œnothera biennis, L., var. *Oakesiana*, Gr. = *Œ. Oakesiana*, Robbins.

Œnothera riparia, Nutt. = *Œ fruticosa*, L., var. *linearis*, Watson.

Œnothera linearis, Mx. = *Œ. fruticosa*, L., var. *linearis*, Watson (in part.)

Œnothera chrysantha, Mx. = *Œ. pumila*, L.

Ammannia Nuttallii, Gr. = *Didiplis linearis*, Raf.

Conioselinum Canadense, T. & G. = *Selinum Canadense*, Mx.

Zizia integerrima, DC. = *Pimpinella integerrima*, Benth & Hook.

Sium lineare, Mx. = *S. cicutæfolium*, Gmelin.

Sium angustifolium, L. = *Berula angustifolia*, Koch.

STARCH IN CHLOROPHYLL.—It is very easy to prove the existence of starch in chlorophyll. Let the green color be destroyed by immersion in alcohol, or by any other bleaching process; then soak the specimen a few moments in Potassium Hydrate to destroy the protoplasm. Testing with iodine the chlorophyll grains immediately assume the characteristic blue tint of starch, especially in the guardian cells of the stomata. Such a neat experiment, having so much bearing on the question of assimilation, should be performed by every botanist interested in vegetable physiology.—J. M. C.

THE BOTANICAL TEXT-BOOK, 6th edition, Part I, Structural Botany, by Asa Gray, LL. D., Ivison, Blakeman, Taylor & Co., New York

and Chicago.—The publication of a new work by Prof. Asa Gray, and the volume before us is in effect new, is always a matter of congratulation to botanists. The present book while especially valuable to teachers of our science, should also be possessed by every student who wishes to keep informed as to the latest discoveries, hypotheses and theories. From the first line to the concluding paragraph one feels that he is guided by a master. We find here that grace of style and conciseness of expression which mark all our author's other writings. He brings to the consideration of the subjects herein embraced the experience of a life-time. What other man could do the work so well? This is the sixth edition of the well-known Botanical Text-book, of which the first was published in 1842, the fifth in 1857. We might almost say that every edition marks an epoch in the progress of science. We need not emphasize the strides that have been made since 1857, a period just preceding the publication of the Origin of Species. And in this connection, as one naturally turns to the portions of a work to which he knows the author has given particular attention, we would advise our readers to peruse the exhaustive chapters on Classification, and on Adaptations for Intercrossing.

The author informs us in his preface that this edition has been entirely re-written. Every line shows careful thought and study. The book has outgrown its original scope, and instead of one volume we are now to have four. The first treats of Morphology, Taxonomy, and Phytography, and is enriched, moreover, by a copious glossary of botanical terms. It is profusely illustrated, and while the old figures appear we have in addition many new ones. These are all that they should be, graceful, characteristic and demonstrative. Prof. G. L. Goodale is engaged in the preparation of the second volume, which is to consider Vegetable Physiology and Anatomy. It will indeed be a handbook of these too much neglected branches, in which Dr. Goodale has achieved great distinction as experimentalist and teacher. The third volume, an introduction to Cryptogamous Botany will be by Prof. Farlow, and the fourth and concluding one Dr. Gray writes, "The present author may rather hope than expect himself to draw up." This will be on the Morphology and Economic Use of the Natural Orders of Phaenogamous Plants.

Here then we have the beginning of a work which when completed will be an absolute necessity to every botanist. Each part is entrusted to a specialist, and each of the co-workers has the advice and assistance of the others. Throughout the whole we may expect to note the guiding spirit, the acute observation and painstaking

thought of the original author. All must join in the fond hope that he may long remain with us in health and strength to complete what he has so ably begun. It is a work that must remain a credit, not only to Botany, but to American science forever.—W. W. BAILEY.

DISTINCTION BETWEEN MONOCOTYLEDONS AND DICOTYLEDONS.—Flahault has shown a beautiful distinction between Monocotyledons and Dicotyledons that any botanist with a moderately good glass can demonstrate for himself. A thin longitudinal section through the young root tip shows that in monocotyledons the root cap seems to be an independent thing, fitting on like a calyptra, while in dicotyledons there is no such distinction, but a perfect blending of tissues. In the former case the root-cap is renewed from its own inner row of meristem, while in the latter it is renewed directly from the *punctum vegetationis*.—J. M. C.

NOTICE.—I would give notice that my address after September 1st will be changed from Hanover to Wabash College, Crawfordsville, Ind. Hence any communications to me of any kind in regard to the GAZETTE should be addressed to that place after the date mentioned above.—JOHN M. COULTER.

AN INTERESTING DEMONSTRATION.—Many plants contain raphides, crystals of oxalate of lime, etc., but cystoliths are of rarer occurrence, although abundant in certain plants, notably in those belonging to the Urticaceæ. A very interesting experiment and one that almost any one possessing a microscope of even ordinary power, say 200 or 300 diameters, may perform for himself is as follows: Take a leaf of *Ficus Indica*, *elastica* or *Mora*. *Morus rubra* or almost any of the Artocarpeæ and make a section of moderate thinness. If too thin the cystoliths will be broken and pulled out by the razor. Under the glass will be seen a beautiful arrangement. Certain cells of the epidermis or of the surrounding tissue are enlarged and specialized and from their top the mass usually hangs upon a short stalk. In *Ficus elastica* the cystoliths consist of an amorphous mass of cellulose studded with crystalline points of carbonate of lime, the whole being in somewhat the form of a very thick bunch of grapes. If now we place a drop or two of acetic acid at the edge of the cover-glass and allow it to creep under while we keep our eye upon the object the result will easily prove the composition of the crystals. Quite a furious effervescence takes place and soon nothing is left but the amorphous cellulose. Upon jarring the table slightly this will be

seen to shake and tremble like a bowl of gelatine jelly. This little experiment is easily tried and may be new to some.—C. R. B.

REPORTS UPON THE BOTANICAL COLLECTIONS MADE IN PORTIONS OF NEVADA, UTAH, CALIFORNIA, COLORADO, NEW MEXICO AND ARIZONA, during the years 1871-75. By J. T. Rothrock.—This forms the sixth volume of the Final Reports of the Wheeler Survey and is a work of over 400 pages, containing 30 plates drawn by Isaac Sprague and W. H. Seaman. There are four chapters and an Appendix. Chapter first contains some general notes on Colorado, such as the flora of the open ground, the flora of the mountains, timber and agricultural resources. Chapter second contains notes of the same general nature upon New Mexico, including also some of Arizona. Chapter third contains notes on the Economic Botany of the region included in the report. In this about 35 species are enumerated as being either already in use or worthy of use. Chapter fourth, containing the bulk of the volume, is devoted to the catalogue. In this we have work credited to ten botanists besides Dr. Rothrock himself. To Sereno Watson were entrusted the *Leguminosæ*; to Dr. Englemann the *Cacteæ*, *Asclepiadaceæ*, *Gentianeæ*, *Cuscuteæ*, *Euphorbiaceæ*, *Cupuliferæ*, *Loranthaceæ*, *Coniferæ*, *Amaryllideæ* and *Juncæ*; to Prof. Porter, the *Polemoniaceæ*, *Borragniaceæ*, *Scrophulariaceæ*, *Labiatæ* and *Polygonaceæ*; to M. S. Bebb, the *Salicaceæ*; to Wm. Boott, the genus *Carex*; to Dr. Vasey, the *Gramineæ*; to Prof. Eaton, the *Filices* and *Ophioglossaceæ*; to Thos. P. James, the *Musci*; to Prof. Tuckerman, the *Lichenes*; and to C. F. Austin, the *Hepaticæ*. Credit to whom credit is due is a maxim that has been closely followed in this volume and we are never at a loss to know just whose work we are examining. It is a pity that the scope of the volume had not been extended enough to include all the collections ever made in the region embraced in the report. It would then have been complete as far as it went, and filled another gap in our scattered flora. The Ferns are more elaborately reported upon than any other order, for we have a full report not only of those collected by the Wheeler Surveys, but of all Ferns hitherto discovered in the regions lying west of 105 degrees west longitude and south of 40 degrees north latitude. As many of these ferns are described in works inaccessible to the ordinary botanist, descriptions are given of all not found in Gray's Manual. All this is a very grand thing in itself and botanists will rejoice in having so complete a work upon the ferns of that curious and immense region, but it strikes one as being out of proportion with the rest of the work.

A little inconsistency or uncertainty is also to be noticed in the matter of the nomenclature of orders. We have *Polemoniaceæ* and *Gentianeæ*, *Rutaceæ* and *Cacteæ*, *Scrophulariaceæ* and *Scrophularineæ*, etc. In the existing confusion in such names we should have some standard and a work from the hands of such eminent botanists should be consistent with itself. This is not meant as a censorious criticism upon a work meriting so much praise, but as a plea for botanists who, like the writer, are often bewildered in this maze of terminations.—J. M. C.

Revision of the North American Liliaceæ, by Sereno Watson.—Botanists will be delighted at the appearance of this paper, for if any branch of phænogamic botany needs revision it is the Monocotyledons. We have so many works starting out with noble promise, but stopping before the end is reached and hence the Monocotyledons have been neglected. The work now done helps to fill this gap, and botanists should be congratulated that it has fallen into such competent hands. The order *Liliaceæ*, as now accepted, presents such a diversity of characters that it is very difficult to group the genera according to their affinities. The genera have here been grouped in a manner that is entirely new, and, with a few exceptions, it works like a charm. Baccate fruit as distinguished from capsular is considered a subordinate character, and a division into three suborders or series has been made, based upon other characters. The first series is distinguished by "scarious floral bracts, persistent nerved perianth, perigynous stamens with introrse anthers, an undivided persistent style, and a loculicidal fruit (if capsular.) Both of the other divisions have the stamens hypogynous or nearly so, with more or less extrorse anthers, and the floral bracts are more or less foliaceous or are wanting. Both also always have distinct perianth—segments and unjointed pedicels. But one has a nerveless deciduous perianth, the styles (when present) more or less united, and the fruit a loculicidal capsule or berry. The other division has distinct styles and a septicidal capsule conjoined with a persistent nerved perianth." The subdivision into tribes is based on the characters of the inflorescence mainly. The first series contains 9 tribes and 25 genera; the second, 3 tribes and 13 genera; the third, 4 tribes and 12 genera; making in all 16 tribes and 50 genera. In glancing through the paper we made the following notes: *Allium* is the largest genus, containing 46 species, 18 of which are new. For *Hesperoscordium* (?) *maritimum* of Torrey is made a new genus, *Muilla* by name. Wood's *Brevoortia* is

restored and the species becomes *B. coccinea*. *Hesperanthes* is raised from a subgenus of the African *Anthericum* to generic rank and contains one species, *H. Torreyi*. *Hastingsia* is the name of a new genus, separated from *Schœnolirion* to include *S. album*, Durand. *Polygonatum latifolium* is ruled out as not being found in this country. In *Smilacina*, *Maianthium* has been raised to generic rank and *S. bifolia*, var. *Canadensis* becomes *M. Canadensis*. The representatives of the genus *Beaucarnea* and many of the genus *Dasylirion* are included under *Nolina*. *Lilium Grayi* is added to our flora from the Peaks of Otter. The genus *Calochortus* stands second in the number of its species, containing 32. A new genus, called *Oakesia*, is made to contain *Uvularia sessilifolia* and *U. puberula*. *U. flava*, Smith, cannot be distinguished from U. *grandiflora*, and hence is dropped from the specific rank. The varieties *album* and *declinatum* of *Trillium erectum* are also dropped and all included under the description of *Trillium erectum*.

The entire order of *Liliaceæ*, throughout the world, contains 180 genera and 1900 species; 50 genera with 235 species are found in the United States and northward. Mexico adds 4 genera and 40 species, and South America, 26 genera and 58 species. Hence in all America we have 80 genera and 333 species. *Allium*, the largest and most widely distributed genus, contains 270 species.

EXPERIMENTS ON THE NUTRITION OF DROSERA ROTUNDIFOLIA.—In the Journal of the Linnean Society for July, Francis Darwin publishes a paper under the above title. The experiments are given in detail and were of the same careful and laborious nature as those of his father. He sums up in a few words the conclusions that would seem to follow: "It would seem that the great advantage accruing to carnivorous plants from a supply of nitrogenous food to the leaves is the power of producing a vastly superior yield of seeds. This will no doubt partly explain the fact which has been a stumbling-block to many, that insectivorous plants seem to thrive without animal food; although, as I have shown, the fed plants are in reality and markedly superior in general appearance. I venture to think that the above experiments prove beyond question that the supply of meat to *Drosera* is of signal advantage to the plants. There can be no doubt that both *Drosera* and other insectivorous plants profit in an analogous manner from the capture of insects in a state of nature.

CYPRIPEDIUM WITH A SECOND LABELLUM.—A short time since a specimen of *Cypripedium barbatum* was brought into the Laboratory of the

Botanic Gardens at Cambridge, which proved quite curious in its way. In addition to the regular labellum a second one had begun to be formed from the lower left-hand sepal. Exactly half of the slipper was formed and that was the half next the proper labellum. Everything on that side was perfect, even to the polished inflected edge and purple color, while the other half was as though no change had taken place, having an entire edge and the usual white and purple stripes. —J. M. C.

Parallel Chorisis in the Petals of Campanula media, L.—Mr. W. W. Bailey called my attention recently to a specimen of *Campanula media*, grown in the Harvard Botanic Gardens, in which there were two perfect corolla tubes. The tubes were entirely distinct to their very insertion and no difference could be noticed in their appearance, one being just as typical as the other. That this was a case of parallel chorisis rather than doubling was apparent from the fact that all the other whorls were perfectly normal. Such result might be produced by an abnormal growth of the androecium, which is really corolla-like at its insertion, but the stamens were unchanged.—J. M. C.

A 4-merous Lilium Philadelphicum.—A specimen of this species has just been pressed in the Harvard Herbarium which has 4 sepals, 4 petals, 8 stamens and 4 carpels. Such monstrosities, overleaping the arbitrary barriers of Systematists, are useful to show that nature does not run bounding walls and insurmountable barriers even between her types.—J. M. C.

Two-parted Cotyledons in Eschscholtzia.—In examining the development of the embryo in a garden setting of *Eschscholtzia Californica*, I found in every seed examined, ten in number, that the cotyledons were completely parted, so much so in some cases as to give the appearance of four cotyledons. Thinking that this might be a generic character other species were examined, *E. minutiflora*, Watson, and some of the so-called varieties of *E. Californica*, but either the seeds were too immature or this character does not hold good, for in those which were maturing embryos no trace of the parting could be found. We are led then to the conclusion that this form was merely a sport, and there is no reason why a leaf should not be parted.—J. M. C.